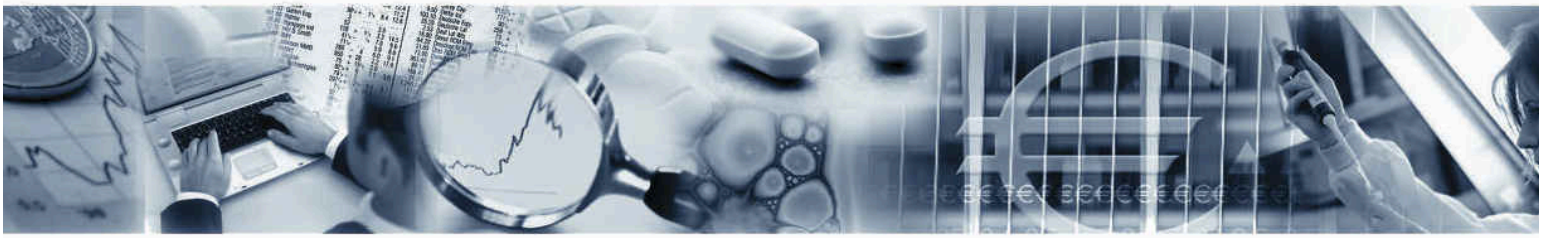


Initiating Coverage Report

Pharming Group

Profitability Within Reach

Chief Research Analyst

Marcel Wijma MSc

+1 (917) 460 6185 (US)

+31 (6) 8489 2954 (NL)

m.wijma@leeuwenhoeck.com

http://www.leeuwenhoeck.com

Date: 31 August 2017

Name:	**Pharming Group**
Country:	**The Netherlands**
Price:	**EUR 0.44**
ISIN Code:	**NL0010391025**
Reuters Code:	**PHAR.AS**
Market Cap (EUR m):	**224.7**
EV (EUR m):	**299.5**
Cash & cash eq. (EUR m):	**25.2**
Shares outstanding (m):	**505.6**
Volume:	**11.6 million**
Free float:	**98%**
52-week Range:	**0.20-0.51**

EUR million	2016A	2017E	2018E
Total Revenues	15.9	66.9	92.8
Net (Loss)/Profit	(17.5)	(8.4)	21.5
Net (loss)/profit ps (cents)	(4.2)	(1.7)	4.3
R&D costs	15.4	17.0	19.0
Cash increase/(decrease)	(0.2)	(10.0)	5.0
Cash and marketable sec.	32.1	23.0	28.0

Contents

Executive Summary

- Pharming Group is a Dutch based biopharmaceutical company and one of the oldest publicly traded biotech companies in Europe. The company is focused on the development of recombinant proteins for therapeutic use. Pharming's main platform is the development of human recombinant proteins through the generation of transgenic animals which express the human protein in their milk.

- Its lead product is RUCONEST®, a recombinant human C1 esterase inhibitor approved for the treatment of angioedema attacks in patients with Hereditary Angioedema (HAE) in the USA (approved 2014) and Europe (approved in 2010). In Europe Pharming commercialises RUCONEST® in Austria, France, Germany, Netherlands and UK and has a distribution agreement with Swedish Oprhan Biovitrum (Sobi) for Scandinavia, Eastern Europe and Italy. In the US, Pharming now distributes the product itself. Other products under development include recombinant-human (rh)-α-glucosidase for the treatment of Pompe's disease, rh-α-galactosidase for the treatment of Fabry's disease and rh-Factor VIII for the treatment of Hemophilia-A. These are all in preclinical stage.

- End of last year, Pharming struck a deal with Valeant to acquire all North American commercialisation rights for its own product, RUCONEST®, including all rights in the US, Mexico and Canada. The deal had a total value of USD 125 million with an upfront fee paid to Valeant of USD 60 million, and future self- funding sales milestone payments up to a further USD 65 million in total.

- As result of the acquisition of the rights for RUCONEST® in North America, the company has entered into operational profitability in 2017Q1, much quicker than previously expected. For 2017 we expect revenues to be USD 65-70 million (2016: USD 15.9

million). Pharming has taken over the complete sales force for RUCONEST® from Valeant and has invested in extending the sales force and medical science liaison (MSL) personnel, both of which are key for a strong uptake of the sales of RUCONEST®. MSLs are needed to establish and maintain peer-peer relationships with leading physicians, referred to as Key Opinion Leaders (KOL's), at major academic institutions and clinics. With regaining full commercial rights for RUCONEST® in North America, the cash flow for Pharming will dramatically improve and we estimate that Pharming will continue to be operationally profitable going forward.

- The current cash position of the company is EUR 25 million, sufficient to carry out the further development of its pipeline and the further strengthening its sales and marketing force, especially as the Company has started generating cash from operations over the first five months of 2017. Last December, Pharming successfully raised EUR 104 million with the help of top tier investors from the US and Europe through a combination of new equity, straight debt and convertible bonds. In May, the company refinanced its existing debt by a single USD 100 million debt facility with Orbimed Advisors in order to redeem a total of EUR 35.9 million of Amortising Convertible Bonds and refinance USD 40 million of Senior Debt. This will mean a significant reduction of its cash burn of EUR 16 million in 2017 and EUR 8 million in 2018.

- **Based on NPV based valuation, we believe that Pharming is substantially undervalued at the current share price of EUR 0.43. We have increased our valuation for Pharming taking into account the acceleration of revenues from RUCONEST® for both acute and future prophylactic use, from EUR 660 million to EUR 940 million. This translates, based on the current number of outstanding shares, shares underlying the remaining EUR 11 million convertible bond (2016-2021) and still outstanding warrants of approximately 609 million shares (518+41+50) into EUR 1.54 per share.**

Company Profile & Technology Platform

Pharming Group is a Dutch based biopharmaceutical company and one of the oldest publicly traded biotech companies in Europe. Pharming became public in 1998 and is developing innovative products, focusing on the treatment of diseases with significant unmet medical needs. These products are developed utilising Pharming's proprietary transgenic production technology.

Pharming currently has a product portfolio which focuses on the commercialization and further development of RUCONEST®® (recombinant human C1-esterase inhibitor) for Hereditary Angioedema (HAE), a genetic disorder. The Company is also evaluating RUCONEST® in other potential indications in the area of ischemia reperfusion injury (e.g. Delayed Graft Function) to generate value both in the short-term and long-term.
In 2014, Pharming acquired certain assets of TRM, a private French company in liquidation. Pharming gained access to new product leads based on their transgenic platform; that included recombinant-human (rh)-α-glucosidase for the treatment of Pompe's disease, rh-α-galactosidase for the treatment of Fabry's disease and rh-Factor VIII for the treatment of Hemophilia-A. In addition, Pharming gained access to transgenic rabbit founder technology and know-how developed by TRM. These programs have not yet entered formal clinical trials. In addition, Pharming is seeking various partnerships to generate additional income from leveraging its rare diseases commercial infrastructure in Western Europe, the USA and by expanding its pipeline further to further maximise the value of its transgenic platform.

Transgenic Production Technology Platform

Pharming's technologies include innovative platforms for the production of protein therapeutics, as well as technology and processes for the purification and formulation of these products. It has developed methods and technology for breeding transgenic animals for subsequent isolation

and purification of protein products from the milk which offers the ability to produce complex proteins at high volume and low cost and for a variety of applications. Conventional methods used for producing recombinant proteins, such as cell culture using animal, bacterial, or yeast cells, are often disadvantaged in that they are expensive for large-scale production, are immunogenetic or are unable to produce proteins with required complex posttranscriptional modifications. In contrast Transgenic technology, using either microinjection or nuclear transfer, enables the expression of human proteins in a system that is more reliable and relatively easy to scale up and can be established and operated at a relatively low cost.

Besides lower costs, transgenic technology provides an ideal route for bulk production since very high expression levels of fully bioactive protein are obtained. However, one has to bear in mind that the purification of proteins from milk under GMP conditions is as costly as with other production methods.
Rabbits produce significant quantities of milk, in the range of 100-250ml/day (approx 10-15l of milk per rabbit per year). Their prolific nature reduces the time required to establish a transgenic line and so accelerates time-to-market for the recombinant protein. Large numbers of genetically identical transgenic rabbits can be generated in a relatively short time.

Business Strategy

Pharming aims to develop innovative therapeutics for unmet medical needs and to provide solutions to the potential limitations of existing recombinant protein production methods. Pharming's commercial focus is primarily aimed at specialty pharmaceutical markets and is intended to cover the entire value chain. Its strategy is based on three goals:

- *Product Development*: Pharming focuses on developing indications for which its platform can offer competitive advantage, most notably greater efficacy, lower immunogenicity or potential savings in manufacturing cost.

- *Commercialisation*: Pharming intends to commercialise RUCONEST® and its other current programs itself in territories where it can take advantage of its own expertise and infrastructure, adapting this where necessary to ensure maximisation of the products' potential. In larger indications or territories where specialised access or knowledge is required, such as the People's Republic of China, the Company's policy is to form strategic partnerships to obtain access to other required competencies, such as marketing and sales. Pharming focuses on the commercialisation of RUCONEST® which currently provides revenues from sales in USA and Western Europe and royalties on sales from partners. The near term focus is on expanding geographical coverage of RUCONEST® in Europe and accelerating sales of the product in the USA. With the buy-back of the US rights of RUCONEST®. from Valeant, the company has its own sales team for North America. Pharming also took over Valeant's sales force in the US of 11 people and will further drive sales growth as it has increased the size of the sales force and hired medical science liaison (MSL) personnel and offers a full patient care programme to eligible patients (RUCONEST® SOLUTIONS).

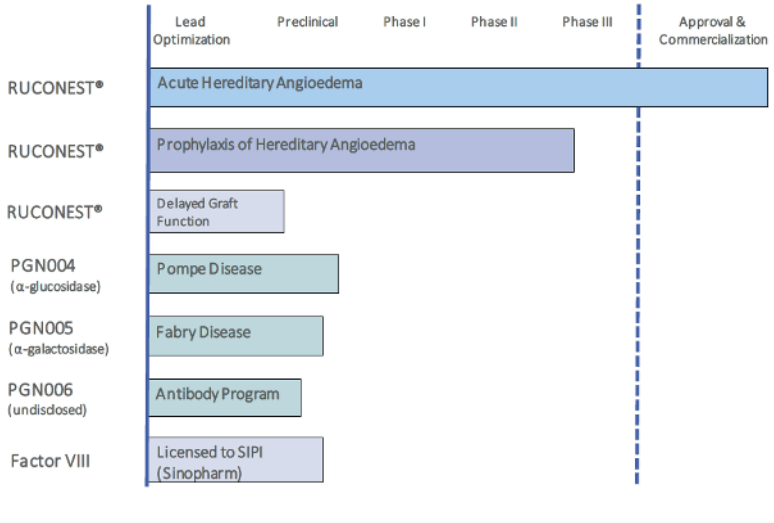
Partnerships

During the last years, Pharming has had several commercial partnerships in Europe for the sales and marketing of RUCONEST®®. Some of them are still in place. However, Pharming has regained the rights in most European countries from its EU partner Sobi. Gaining market access across Europe has generally been slower than the company initially expected, reflecting the process of obtaining national, regional and local listings and reimbursements, getting labelling improvements approved by the EMA and developing real competition with existing market participants. Hence, it makes sense for Pharming to, in the future, regain most of the distribution rights in Europe as well. Recently, the home treatment was added to the EU label, which now creates a more level playing field for Pharming and its partner Sobi in the EU.

Pipeline: Focus on Recombinant Human Proteins

Pharming currently has a product portfolio which focuses on the commercialisation and further development of RUCONEST® (recombinant human C1-esterase inhibitor) for HAE, a genetic disorder. The Company is also evaluating RUCONEST® in other potential indications in the area of ischemia reperfusion injury (e.g. Delayed Graft Function) to generate value both in the short-term and long-term. Furthermore, Pharming has other recombinant protein assets (e.g. α-glucosidase and α-galactosidase) but these have not yet entered formal clinical trials.

In June 2010, RUCONEST® was the first recombinant C1-esterase inhibitor replacement therapy authorized by the EMA. In 2015 the marketing authorization for RUCONEST® was renewed for an unlimited period. In July 2014, the FDA approved RUCONEST® for Acute HAE in the US. In October 2015, the FDA granted 12 years of exclusivity to RUCONEST® 50 IU/kg. The determination of exclusivity ensures that prior to 16 July 2026 the FDA will not approve any applications for biosimilars of RUCONEST®.



RUCONEST® (approved in Acute HAE, clinical development Prophylaxis HAE)

End of last year, Pharming and its former US partner Valeant reached agreement for Pharming to acquire all North American commercialization rights to RUCONEST®, including all rights in the USA, Mexico and Canada. As a result of the acquisition of the rights for RUCONEST® in North America, the company could reach its first net profitable quarter some time later in 2017 (operational profitability was achieved in 2017Q1) much quicker than previously expected.

In July 2016 Pharming announced positive results from a Phase II clinical study of RUCONEST® for prophylaxis in patients with HAE. In the study, RUCONEST® showed a clinically relevant and statistically significant reduction in attack frequency for both the twice-weekly and once-weekly treatment regimens as compared with placebo. In the study, RUCONEST® showed a clinically relevant and statistically significant reduction in attack frequency for both the twice-weekly and once-weekly treatment regimens as compared with placebo.

32 HAE patients deficient in C1 esterase inhibitor and with a history of at least four attacks per month were enrolled in the randomized, double-blind, placebo-controlled study. The patients received RUCONEST® once and twice weekly and placebo in each of three four-week treatment periods in a cross-over design. The primary efficacy endpoint was the number of HAE attacks per 28 day treatment period and the secondary endpoint was clinical response, defined as a ≥ 50% reduction in the number of attacks from treatment with placebo to treatment with RUCONEST®.

In the intent-to-treat analysis (ITT), the study found a statistically significant difference in the mean number of HAE attacks that patients experienced during treatment with both the twice-weekly (p-value <0.0001) and once-weekly (p-value =0.0004) RUCONEST® regimen as compared with placebo. Patients on placebo had a mean of 7.2 attacks (95% confidence interval[CI]: 5.8-8.6) per four week treatment period which was reduced to a mean of 2.7 attacks on RUCONEST® twice weekly (95% CI: 1.8-3.7) and a mean of 4.4 attacks on RUCONEST® once-weekly (95% CI: 3.1-5.6). For the analysis of the secondary endpoint in the ITT population, 74% of patients (95%

CI: 57-86) on the twice-weekly RUCONEST® regimen had at least a 50% reduction in their attack frequency. This was confirmed in the per-protocol population of patients, which included patients who completed the study without any major deviations (n=23), where 96% of patients (95% CI: 79-99) on the twice-weekly RUCONEST® regimen and 57% (95%CI: 37-74) on the once weekly RUCONEST® regimen had at least a 50% reduction in their attack frequency. Furthermore, in this group, twice weekly RUCONEST® treatment reduced the attack frequency by 72% (95% CI: 63-81) and once weekly RUCONEST® treatment reduced attack frequency by 44% (95% CI: 27-62) as compared with placebo.

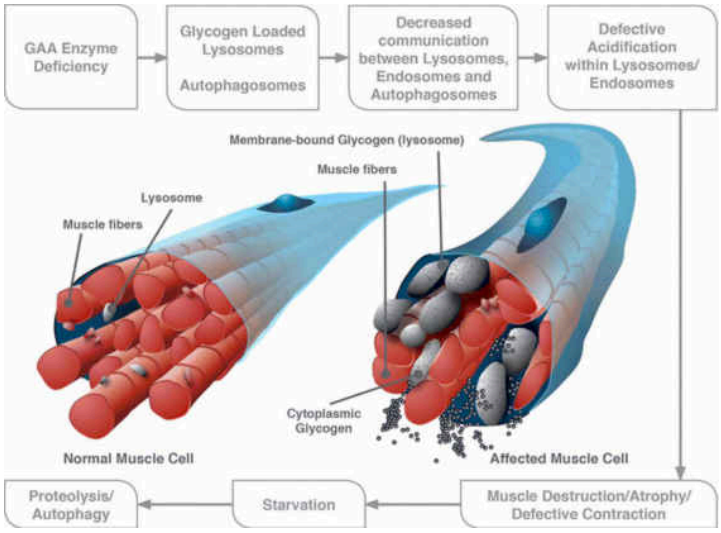
		Placebo	RUCONEST®	RUCONEST®
Intent-to-Treat Analysis			Once/week	Twice/week
(n=32)	Primary: Mean number of attacks	7.2	4.4	2.7
	Confidence Interval (95%)	5.8-8.6	3.1-5.6	1.8-3.7
	p-value		*0.0004*	*p<0.0001*
(n=31)	Secondary: % Patients with more than 50% reduction in attack frequency		42%	74%
	Confidence Interval (95%)		26-59	57-86
Per Protocol Analysis				
(n=23)	Mean number of attacks	7.5	3.8	2
	Confidence Interval (95%)	6.0-9.0	2.5-5.1	1.3-2.7
	p-value		*p<0.0001*	*p<0.0001*
(n=23)	% Patients with more than 50% reduction in attack frequency		57%	96%
	Confidence Interval (95%)		37-74	79-99

If approved in this indication, RUCONEST® will be able to enter this additional market segment, currently worth approximately USD 900 million. RUCONEST® therefore has the potential to be the only recombinant C1 esterase inhibitor approved to target both the acute market and the prophylaxis market in HAE. The US HAE acute therapy market is worth USD 900 million – 1 billion.

Alpha-glucosidase in Pompe disease (PGN004)

Pompe disease is a rare inherited neuromuscular disorder that causes progressive muscle weakness in people of all ages. The disease is named after Johannes C. Pompe, a Dutch doctor who first described the disorder in 1932 in an infant patient. However, Pompe can affect people of all ages, with symptoms first occurring at any time from infancy to adulthood.

Pompe disease is caused by a defective gene that results in a deficiency of an enzyme, acid alpha-glucosidase (GAA). This enzyme is required to breakdown (metabolise) the complex carbohydrate glycogen and convert it into the simple sugar glucose. Glycogen is a thick, sticky substance and failure to properly break it down results in massive accumulation of lysosomal glycogen in cells, particularly in cardiac, smooth, and skeletal muscle cells.



Pathophysiology of late-onset Pompe disease. Abbreviations: GAA, acid alpha-glucosidase

Additional abnormalities may include enlargement of the heart (cardiomegaly), the liver (hepatomegaly), and/or the tongue (macroglossia). Without treatment, progressive cardiac failure usually causes life-threatening complications by the age of 12 to 18 months. Pompe disease can also present in childhood, adolescence or adulthood, collectively known as late-onset Pompe

disease. The disease is estimated to affect 1 in every 40,000 individuals. The only approved therapy to date is Enzyme Replacement Therapy (ERT) wherein recombinant human α-glucosidase, produced on Chinese Hamster Ovary (CHO) cells (Myozyme®/Lumizyme® from Genzyme (acquired by Sanofi), is administered intravenously (IV) every 2 weeks with a dosing of 20 mg/kg body weight. Patients receiving ERT need treatment during their entire life. The major drawbacks in ERT are immune responses which can be raised towards an impure recombinant protein and low efficacy due to limited ability of the protein to reach and bind to its specific receptors on the into target cells, which seems to be the main reason for the high dosing. Several alternatives to Myozyme are under development, including a yeast derived α-glucosidase with an improved glycosylation pattern for better recognition by cellular receptors (Oxyrane) and a gene therapy approach by Duke University.

Human recombinant α-glucosidase has been produced in transgenic animals before. Until 2002, Genzyme together with Pharming generated transgenic rabbits producing α-glucosidase. Production levels at the time were as high as 8 g/L (Bijvoet et al. 1998, 1999). The transgenic material was shown to be active in clinical trials. In 2002 all assets related to the α-glucosidase program were transferred to Genzyme under the Settlement Arrangements of 15 August 2002. Genzyme then stopped the program, preferring to continue with the better-understood CHO-cell program which GAA became Myozyme®, but scaling issues forced it to develop a second cell-line version to achieve capacity, which became Lumizyme®. Both products carry a boxed warning for immunogenicity. Given insights and experience gained with RUCONEST®; a similarly highly glycosylated protein, Pharming is aiming to develop a less immunogenic GAA from its transgenic rabbit platform. than Myozyme/Lumizyme. The product will not be considered a 'Biosimilar' by the authorities as it is produced on a totally different production platform, but from an activity and safety perspective, this new product will likely be broadly biosimilar to Myozyme/Lumizyme. The approach by Pharming (if successful) may also result in a so-called 'Biobetter'. In 2016, sales of Myozyme®/Lumizyme® were EUR 725 million, an increase of 13.5%. On this basis, assuming a

similar growth for the products in 2017, the size of the Pompe disease market globally may be estimated at approximately EUR 1 billion.

Alpha-glucosidase in Fabry disease (PGN005)

Fabry disease is another rare inherited disorder of lipid (fat) metabolism, similar to Pompe disease, resulting from the deficient activity of a different enzyme, alpha-galactosidase A (a-Gal A). This disorder belongs to the same group of diseases known as lysosomal storage disorders. This enzymatic deficiency is caused by mutations (or alterations) in the a-Gal A gene (abbreviated as *GLA*) that instructs cells to make the a-Gal A enzyme. Lysosomes function as the primary digestive units within cells. Enzymes within lysosomes break down or digest particular compounds and intracellular structures. a-Gal A functions to break down specific complex sugar-lipid molecules called glycolipids, specifically, globotriaosylceramide (GL-3 or Gb3), lyso-GL-3/Gb3 and related glycolipids, by removing the terminal galactose sugar from the end of these glycolipid molecules. The enzyme deficiency causes a continuous build-up of GL-3/Gb3 and related glycolipids in the body's cells, resulting in the cell abnormalities and organ dysfunction that particularly affect the heart and kidneys. The *GLA* gene is located on the X-chromosome and therefore, Fabry disease is inherited as an X-linked disorder. Males are typically more severely affected than females.

There are two major disease phenotypes: the type 1 "classic" and type 2 "later-onset" subtypes. Both lead to renal failure, and/or cardiac disease, and early death. Type 1 males have little or no functional a-Gal A enzymatic activity (<1% of normal mean), and marked accumulation of GL-3/Gb3 and related glycolipids in capillaries and small blood vessels which cause the major symptoms in childhood or adolescence. These include the acroparesthesia (excruciating pain in the hands and feet which occur with exercise, fevers, stress, etc.); angiokeratomas (clusters of red to blue rash-like discolorations on the skin); anhidrosis or hypohidrosis (absent or markedly decreased sweating); gastrointestinal symptoms including abdominal pain and cramping, and frequent bowel movements; and a characteristic corneal dystrophy that does not affect vision.

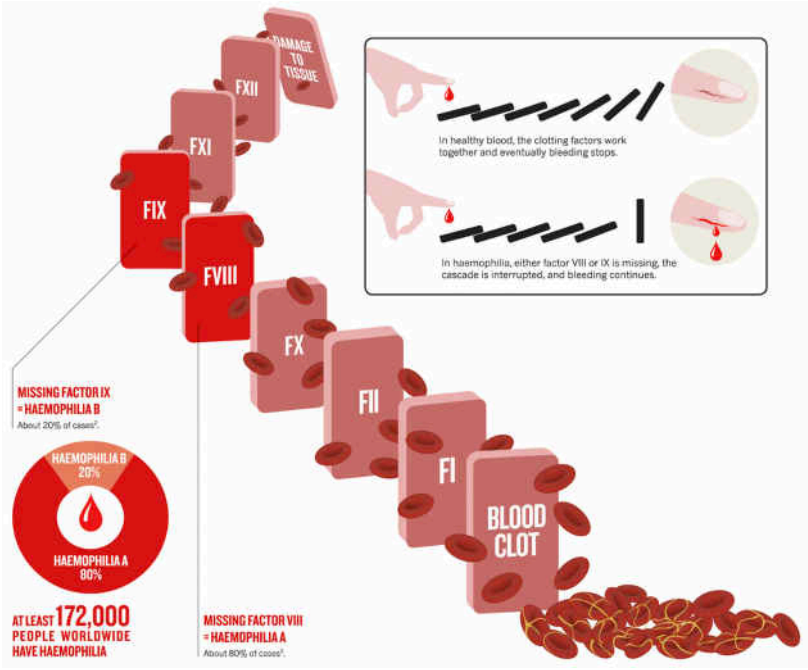
With increasing age, the systemic GL-3/Gb3 deposition, especially in the heart leads to arrhythmias, left ventricular hypertrophy (LVH) and then hypertrophic cardiomyopathy (HCM), and in the kidneys to progressive insufficiency and then to renal failure, and/or to cerebrovascular disease including transient ischaemic attacks (TIAs) and strokes.

There are only two approved treatments at present, Fabrazyme®, also from Genzyme (now Sanofi-Genzyme), which is agalsidase beta, a form of the human enzyme produced by recombinant DNA technology, also in CHO cells, and Replagal from Shire, also a recombinant form of agalsidase beta from a human cell line. The FDA has granted Orphan Drug status to another investigational therapy called AT1001, manufactured by Amicus Therapeutics, for the treatment of Fabry disease. This oral therapy is designed to enhance an individual's residual alpha-galactosidase A activity. With any genetic disorder which involves the patient being unable to produce a protein (enzyme) correctly, supply of the correctly produced enzyme is normally the standard of care, and other approaches tend to leave patients at risk of relapse or breakthrough symptoms, as has been seen for HAE. As for α-glucosidase, Pharming believes that its own platform technology can produce a high purity, less immunogenetic α-galactosidase that will compare favourably with Fabrazyme on immunogenicity.. In 2016, sales of Fabrazyme® increased 14.7% to EUR 674 million. Over 2016, Shire reported sales of Replagal of USD 452.4 million. Assuming similar growth in 2017 for Fabrazyme, the approximate size of the Fabry's disease market may be estimated at approximately USD 1.3-1.4 billion.

Factor VIII for the treatment of Hemophilia-A

Factor VIII (FVIII) is an essential blood-clotting protein, also known as anti-hemophilic factor (AHF). In humans, Factor VIII is encoded by the *F8* gene. Defects in this gene result in hemophilia A, a recessive X-linked coagulation disorder. Factor VIII is produced in liver sinusoidal cells and endothelial cells outside of the liver throughout the body. This protein circulates in the bloodstream in an inactive form, bound to another molecule called von Willebrand factor, until

an injury that damages blood vessels occurs. In response to injury, coagulation Factor VIII is activated and separates from von Willebrand factor. The active protein (sometimes written as coagulation Factor VIIIa) interacts with another coagulation factor called factor IX. This interaction sets off a chain of additional chemical reactions that form a blood clot.



Coagulation Cascade of Hemophilia

Hemophilia-A, also known as classical hemophilia, is a genetic bleeding disorder caused by insufficient levels of a blood protein called Factor VIII. Clotting factors are specialised proteins that are essential for proper clotting, the process by which blood clumps together to plug the site of a wound to stop bleeding. Individuals with Hemophilia-A do not bleed faster or more profusely than healthy individuals, but, because their blood clots poorly, they have difficulty stopping the flow of blood from a wound. Hemophilia-A can be mild, moderate or severe, depending on the baseline level of Factor VIII made by that individual. The approximate size of the global market for

recombinant versions of clotting Factor VIII in 2014 was USD 2.7 billion. According to a recent market study by Technavio, the global Factor VIII deficiency treatment market is projected to grow to USD 11 billion in 2021.

As for the liposomal storages diseases, the recognised standard of care for Hemophilia-A is replacement of the missing factor, in this case Factor VIII. Treatment consists of replacing the missing clotting protein (Factor VIII) and preventing the complications associated with the disorder. Replacement of this protein may be obtained through recombinant Factor VIII, which is artificially created in a lab. Many physicians and voluntary health organisations favour the use of recombinant Factor VIII because it does not contain components derived from human blood. Factor VIII can also be obtained from frozen plasma (i.e., blood donations). Human blood donations do carry a risk of transmitting viral infection such as hepatitis. The FDA has approved several recombinant forms of Factor VIII for the treatment of hemophilia-A including Helixate®FS (CSL Behring); Recombinate® (Baxter); Kogenate®FS (Bayer HealthCare); Advate® (Baxter);

ReFacto® (Pfizer); Eloctate® (Biogen-Idec) and Xyntha® (Pfizer). Human plasma-derived preparations include Monarc-M (Baxter), Monoclate-P® (CSL Behring), Hemofil M (Baxter), and Koate-DVI (Kedrion). Nuwiq was approved by the FDA in 2015, an intravenous therapy for adults and children. The medication is manufactured by Octapharma. In 2015, Adynovate was approved for use in adults and adolescents, aged 12 years and older. It is made by Baxalta, part of Shire. In 2016, the FDA approved the drug Kovaltry Antihemophilic factor (recombinant) for the treatment of hemophilia-A in children and adults. Kovaltry is made by Bayer.

Pharming is assisting its Chinese partner (CSIPI) in producing a quality recombinant Factor VIII replacement therapy product. Further details on this program will be released once the program enters into clinical studies.

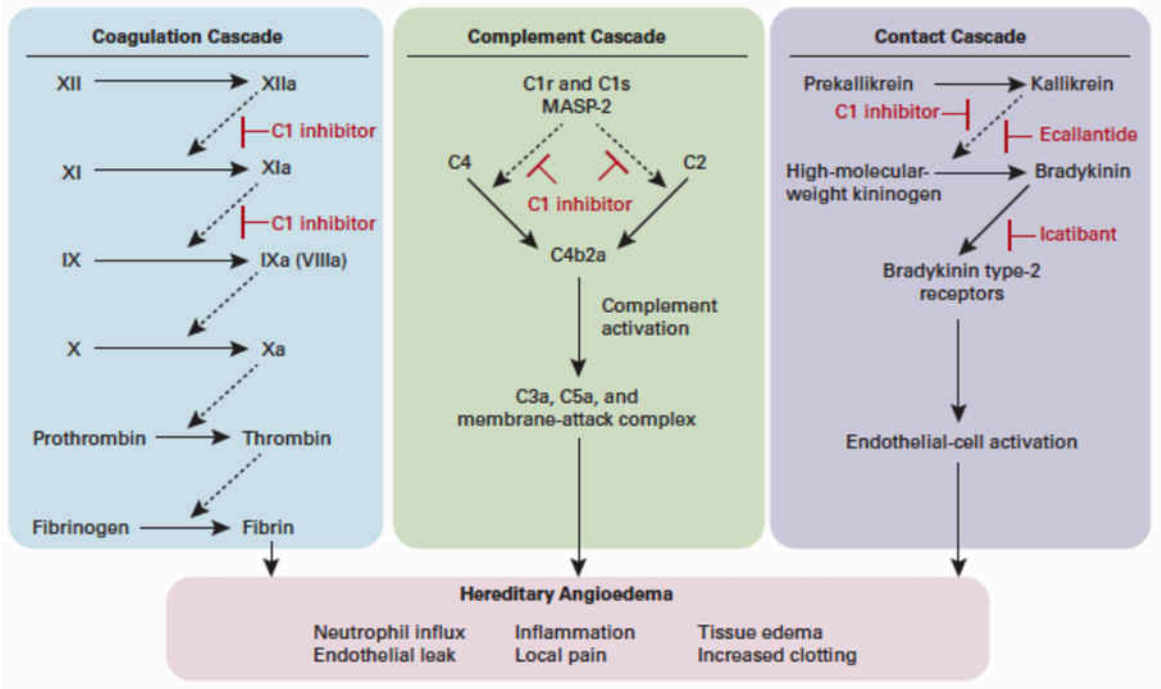
rC1INH and Hereditary Angioedema (HAE)

Hereditary angioedema is a genetic disease caused by the deficiency of C1-inhibitor (C1INH). C1INH is a plasma protein that is involved in the regulation of the complement system and the contact system. Both systems are part of our immune system. The disease is characterized by acute attacks of localized swellings or bruising of soft tissue. These attacks can be caused by minor trauma as well as emotional stress.

Hereditary angioedema (HAE) seriously affects the quality of life and, in those cases where the gastrointestinal tract or upper airways are affected, can lead to life-threatening complications. Most commonly, the respiratory and gastrointestinal systems are involved. Patients with gastrointestinal involvement generally experience severe abdominal pain, nausea and vomiting. Those with respiratory complication develop partial to complete obstruction, which can lead to suffocation. Onset is quick, often unprovoked, and generally persists for a duration of 24-72 hours. It is estimated that between 10,000 and 50,000 people in the western world suffer from HAE. Current therapeutic options consist of the administration of plasma derived C1INH for acute attacks and prophylactic treatment with attenuated androgens or anti-fibrinolytics.

There are however insufficient supplies of plasma-derived C1INH available to fulfil the demand. Production costs are very high and plasma-derived products always carry the risk of transferring blood-borne diseases from the donor to the recipient. The use of androgens is associated with a variety of side-effects, especially in pregnant women and children. Attenuated androgens or anti-fibrinolytics are not effective in case of an acute attack. There are two recognized and accepted types of HAE: I and II. Type I is more common, found in 85% of the HAE population. It is characterized by a significant decrease or total absence of C1INH. Type II HAE, presenting in only 15% of those with the disorder, displays normal to increased levels of dysfunctional C1INH.

The role of C1INH, HAE and the Immune System



Dysregulation of coagulation, complement, and contact cascades in hereditary angioedema. C1 inhibitor controls activation in the complement, coagulation, and contact cascades, and all three cascades are dysregulated in hereditary angioedema. Replacement of C1 inhibitor restores homeostasis. Ecallantide (KALBITOR) and icatibant (FIRAZYR) specifically inhibit the contact cascade but have no direct effect on the complement or coagulation cascades. Dashed arrows indicate enzyme cleavage steps; T bars indicate points of inhibition.

The immune system protects the body against infections by bacteria, viruses and other parasites. It is really a collection of responses that the body makes to infection. So it is sometimes called the 'immune response'. The white blood cells involved in the acquired immune response are called 'lymphocytes'. There are two main types of lymphocytes - B cells and T cells. B and T lymphocytes are made in the bone marrow, like the other blood cells. They have to fully mature before they can help in the immune response. B cells mature in the bone marrow. But the

immature T cells travel through the blood stream to the thymus gland where they become fully developed. B cells react against invading bacteria or viruses by making proteins called antibodies. The antibody made is different for each different bug. The antibody locks onto the surface of the invading bacteria or virus. The invader is then marked with the antibody so that the body knows it is dangerous and it can be killed off. The binding of antibody to its antigen often triggers the complement system through the so-called classical pathway. The complement system is part of the immune system, like antibodies are part of the immune system. It is a defense mechanism that uses at least 30 proteins in the blood. It is named complement, because it helps antibodies to kill invaders or antigens. Another part of the immune system is the contact system. Activation of both the contact and complement system has been demonstrated in a variety of human diseases. A typical feature of both systems is that when activated, they give rise to several proteins, such as bradykinin, which influences endothelial cells. Layers of endothelial cells are lining the inside surface of blood vessels and lymph vessels. C1INH is a major inhibitor of both the complement and the contact system and is therefore endowed with anti-inflammatory properties. Several studies proved that patients with HAE had significantly decreased levels of C1INH. C1INH is the only known inhibitor of the activated proteins C1s and C1r of the complement system and is a major inhibitor of activated factor XII (pre-kallikrein = inactivated form of kallikrein) and XI (responsible for blood clotting) of the contact system. Kallikrein has been shown to release the protein bradykinin. In intact blood vessels, bradykinin has a function in keeping the blood flowing and keeping the vessels healthy. It stimulates the repair of vessels and is thought to play a major role in the symptomatology of acute attacks in patients with HAE. The large quantity of bradykinin releases during acute attacks of HAE is thought to be responsible for most symptoms by directly causing increased vascular permeability (edema and swelling). So the major function of C1INH within the human body includes the prevention of C1 complement auto activation.

Management Capabilities

Pharming is led by seasoned biotechnology innovators. The company is led by an experienced Board and management team, which has been responsible for the successful development of the business and has build up a successful track record of developing, protecting and commercializing innovative scientific products and processes. In the past several years, Pharming has been investing in developing a team of experts that have a focus on patient outcomes and can deliver results. Its board and senior management team are highly experienced in the development and commercialisation of therapeutics for unmet medical needs.

Management Team

Sijmen de Vries, MD, MBA: Chief Executive Officer

Dr. De Vries has extensive senior level experience in both the pharmaceutical and biotechnology industry. He joined Pharming from Switzerland-based 4-Antibody where he was CEO. Dr. De Vries has also been CEO of Morphochem AG and prior to this he worked at Novartis Pharma and Novartis Ophthalmics and at SmithKline Beecham Pharmaceuticals Plc where he held senior business and commercial positions. Dr. De Vries holds an MD degree from the University of Amsterdam and a MBA in General Management from Ashridge Management College (UK)

Prof Bruno M. Giannetti, MD, PhD: Chief Operations Officer

Dr. Giannetti is responsible for the Company's operations including research and development, manufacturing, non-clinical and clinical development, regulatory affairs, drug safety and medical information. He has more than 30 years of experience in the pharmaceutical and biotech industry. Previously, he was the CEO of AM-Pharma BV (NL) and President and CEO of Verigen AG, Germany. He has served as senior management consultant for pharmaceutical R&D projects at

Coopers & Lybrand (in Switzerland and the UK). Dr. Giannetti was also worldwide Vice- President Marketing and Medical Information at Immuno, Austria and Head of Clinical Research at Madaus AG, Germany. Dr. Giannetti holds a PhD in Chemistry, a MD PhD degree in Medicine from the University of Bonn and has recently been appointed Professor at the Pharmaceutical Faculty of the University of Seville (Spain).

Mr Robin Wright, FCA: Chief Financial Officer

Mr Wright has extensive senior level experience as a CFO of public companies in both the pharmaceutical and biotechnology industries. He is a qualified accountant and joined Pharming from Sweden-based Karolinska Development AB (KDEV:SS), where he was CFO and Head of Business Development. Mr Wright was also CFO and Head of Business Development at Orexo AB (ORX:SS) in Sweden. Prior to this, he worked in private equity and corporate finance advisory roles, including long periods at Citibank Salomon Smith Barney and Barclays de Zoete Wedd. He has completed over 165 global license and M&A transactions as well as many financing transactions within the pharma/biotech sector. Mr Wright holds a BA degree in chemistry from Oxford University and is a Fellow of the Institute of Chartered Accountants in England and Wales in the UK.

Anne-Marie de Groot: Senior Vice President Organisational Development

Mrs. De Groot is responsible for developing and executing internal strategic development within the Company to drive performance and identify and implement best business practices, including continuous education and alignment of the organization to be prepared to deliver on new challenges. She has extensive and hands-on experience leading the Human Resources, Internal Communications, Information Technologies and Support Services groups and plays a key role in aligning talent to business strategy, cultivating an environment of high employee engagement and in developing the organizational design. Annemarie has over 10 years of experience crossing the

full spectrum of the HR discipline including leadership and talent development, talent acquisition, corporate culture development, organization design and restructuring, mergers and acquisitions, compensation and benefits, payroll and performance management. She held various Human Resources and Talent Acquisition positions at Randstad, Janssen Pharmaceuticals (the pharmaceutical companies of Johnson and Johnson) and Pharming. She holds a Bachelor in Social Work and a Bachelor in Human Resources Management from Hogeschool Leiden.

SWOT Analysis

Strengths	Weaknesses
Strong management with extensive relevant technical, commercial and financial expertise	
Clinical stage pipeline in a disease with a relatively high prevalence	Share price in cents increases impact of traders on the share price performance and keeps it unnecessary depressed.
Regain of US rights to RUCONEST® dramatically improves cash flow development and has delivered initial operating profits	Dependence on one large commercial product (RUCONEST®)

Opportunities	Threats
Ageing population offers predictable and ongoing strong growth in number of patients	Competition from larger companies (Shire, CSL)
Large growing markets with high unmet medical need	Delays in pipeline development
Potential strong development of its pipeline	Development of new and innovative therapies against hereditary angioedema

Patent Position

The company owns and has in-licensed a significant number of patents and patent applications worldwide, broadly covering the technology for the production of recombinant proteins in the milk of transgenic animals, as well as the specific products under development. Protection for recombinant proteins currently produced in milk as well as methods of generating transgenic animals will last beyond 2020.

Typically, various aspects of manufacturing and use of Pharming's products are covered by separate patents, trade secrets and know- how, thus creating several independent layers of protection around each product. For instance, Pharming's IP position in the production and use of RUCONEST® not only covers the therapeutic compound itself, but also methods of production and purification, improved versions of RUCONEST®, and therapeutic use in a large number of medical indications, including (but not limited to) HAE and other diseases linked to C1 inhibitor deficiency.

Intellectual Property License Agreements

Patents and other proprietary rights are critical to Pharming's business. Pharming's policy is to file patent applications to protect technology, including production processes, products (or composition of matter) and use of products, and improvements thereto that are of potential interest to the development of its business. Pharming's policy is to extend patent coverage to countries that represent a market opportunity for its products, its technology or both, in order to be able to sell licenses or form partnering alliances for joint development of its technologies in related fields. The Company also relies on, trade secrets, know- how and other measures to protect its proprietary technology, drug candidates and products. The most effective form of defense for Pharming's lead product RUCONEST® is the data exclusivity rights it has in the major US market, which last until

2026. While not a patent, this prevents another party from developing its own product and referencing the trials that Pharming has completed as evidence for its own product. In practice, this means that new entrants must develop their own recombinant product and must test it in the clinic as if RUCONEST® did not exist. Pharming's data exclusivity in respect of such trials lasts until 2026 in the US, providing strong protection in that market. Pharming's new products in Pompe disease and Fabry disease will benefit from similar rights once they have completed their own clinical trial programs.

Financials

For 2017H1 ended 30 June 2017, net product sales increased 617% to EUR 30.1 million compared to EUR 4.2 million in the same period last year. The strong increase was due to the fact that the company received all of the revenue from US product sales of RUCONEST®, instead of the previous 30% supply share of net sales. Next to that, the company generated a considerable increase of the sales volumes in the US. Operating income improved to a profit of EUR 4.2 million from a loss of EUR 6.2 million in 2016H1. However, the net result resulted in a loss of EUR 30.2 million due to financing expenses mainly associated with the replacement of the previous debt facility and the extinction of the Amortising Convertible Bonds by a USD 100 million bridge loan facility provided by OrbiMed Advisors. The Loan was used to redeem a total of EUR 35.9 million of Amortising Convertible Bonds and refinance USD 40 million of Senior Debt. This eliminated the risk of a 24% dilution effect and it also significantly reduced the near term cash burn of EUR 16.5 million in 2017 and EUR 7.7 million in 2018. The equity position amounted to EUR 6.8 million from EUR 27.5 million as a result of the financing expenses.

In July the USD 100 million bridge loan facility was replaced by a 4 year new USD 100 million debt finance agreement with OrbiMed Advisors for the same terms and conditions as the bridge loan.

For the whole year we expect an ongoing strong growth in revenues from sales of RUCONEST® due to increased investments in sales & marketing in the US and the returned full rights for RUCONEST® in the western European countries. For 2017FY we estimate total revenues to amount to EUR 66 million and further increasing in 2018 to EUR 93 million and in 2019 to EUR 137 million. On the operating level, the company already reached profitability in 2017H1. Due to high one-off financial expenses, there will be a net loss at the bottom line for a few more quarters. In the next few years this will quickly turn into net profitability with lower than expected financial expenses as

a result of the recent finance agreement reached with OrbiMed.

Profit & Loss Statement

EUR million	2016A	2017E	2018E	2019E
Total Revenues	16.2	66.9	92.8	129.8
Cost of Sales	4.7	7.1	9.1	12.9
Gross Profit	**11.5**	**59.2**	**83.5**	**116.9**
R&D Costs	15.4	17.0	22.0	24.0
G&A Costs	4.6	6.5	7.5	8.5
Marketing& Sales	3.0	23.5	25.6	28.3
Operating Profit	**(11.5)**	**12.2**	**28.4**	**56.1**
Financial Income/(Expenses)	(6.0)	(28.0)	(16.0)	(15.0)
Net Profit/(Loss)	**(17.5)**	**(15.8)**	**12.4**	**41.1**

Consolidated statement of cash flows

EUR million	Dec 31st 2016A (12 months)	Dec 31st 2017E (12 months)
Cash flow from operating activities	(10.0)	20.0
Cash flow from investing activities	(57.5)	(4.0)
Cash flow from financing activities	67.3	(10.0)
Cash and cash equivalents at beginning of the period	31.8	32.1
Net change in cash and cash equivalents	(0.2)	6.0

Valuation

Based on our NPV based valuation, we believe that Pharming is substantially undervalued at the current share price of EUR 0.44. We have increased our valuation for the company taking into account higher than expected future revenues from RUCONEST® for both acute and prophylactic use. the company's current total value should increased from EUR 660 million to EUR 940 million, which translates, based on an expected number of outstanding shares of approximately 609 million, into EUR 1.54 per share. At this moment we do not address value to other programs in Pharming's pipeline. This conservative approach offers potential upside for the share price.

Valuation RUCONEST® in Acute and Prophylactic HAE

In estimating a value for RUCONEST®, we took into account potential markets in the US and Europe with the US market calculated to be 75-85% of the total market. We calculate a Risk adjusted Discount Rate of 8%. For RUCONEST® for prophylactic use we go with a LOA of 80% and a market launch in 2020 in the US. Pricing per attack is set at USD 10,000 with an average of 25 attacks per year. We calculate a net margin rising to 60% within a few years. We estimate that a peak market share of 20-25% for acute HAE and 10% for prophylactic HAE should be possible.

Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Market Size US Acute HAE	824	849	883	927	973	1022	1073	1127	1183	1242	1304
Penetration	7.7%	10.4%	15.0%	18.0%	20.0%	21.0%	22.0%	23.0%	22.5%	22.5%	21.0%
Market Size US Prophylactic	849	849	900	909	918	926	934	940	946	950	954
Penetration	0.0%	0.0%	0.0%	0.5%	1.5%	2.5%	3.5%	4.5%	6.0%	7.5%	9.0%
Total Revenues (USD m)	66.3	91.3	136.4	176.9	216.7	250.2	287.4	329.5	362.2	401.8	421.0
Margin up to 60%	-8.4	21.5	57.7	90.8	122.1	139.9	131.1	146.5	155.8	168.2	171.3
WACC 8%	1.00	0.93	0.86	0.79	0.74	0.68	0.63	0.58	0.54	0.50	0.46
NPV (million)	-8.4	20.0	32.3	72.1	75.1	78.2	82.6	85.5	84.2	84.2	79.3
Total NPV (million)											**983.7**
Value per share (EUR)											**1.54**

Competitive Landscape

Several other companies are developing treatments for HAE, although Pharming is the only one with a recombinant rather than blood-plasma product. In Europe, two other plasma-derived C1 inhibitor products and one other product have been approved for the treatment of acute HAE attacks. In the US, one plasma-derived and two other products have been approved for acute HAE attacks and two plasma derived product for prophylaxis (next to Cinryze, also Haegarda of CSL was approved recently).

Overview Current Treatments HAE

		Recombinant C1 Inhibitor	Plasma-derived C1 Inhibitor concentrates		Bradykinin receptor antagonist	Kallikrein inhibitor
Names		RUCONEST® ^	Cinryze^^^	Berinert	Firazyr**	Kalbitor^^^^
Owner		Pharming	Shire	CSL Behring	Shire	Shire
Sales run rate†		$60m	$914m ††	$300m	$512m	$47m - declining
Efficacy		Good & consistent	Good	Good	Good	Good
	Dosing (C1INH)	50 U/kg*	~ 12 U/kg	20 U/kg	N/A	N/A
	Treatment type	Acute	Prophylaxis	Acute****	Acute	Acute
	Response < 4h†	89-96%	~ 52%	70%	58-74%	73%
Safety concerns		Very low risk of allergic reaction	Warning: Risk of blood clots	Warning: Risk of blood clots	97% injection site reactions	Black box warning: 3.9% Anaphylaxis
	Plasma risk	NO	YES	YES	N/A	N/A
Purity (C1INH)		>99.9%	±80%	±95%		
Relapse / worsening		Uncommon	Uncommon	Uncommon	11-31%***	17%
Administration		IV (SC, IM coming)	Twice weekly IV	IV	SC	SC (Hospital only)

† Sales figures are Pharming estimates based on run rate of most recent relevant selling company's releases and financial reports as well as IMS data and other proprietary databases. Response < 4h figures are for acute products, or represent reduction of attacks from base rate for prophylactic products
* Optimal efficacy of C1INH therapy is achieved at doses ≥50 U/kg ("Target levels of functional C1-inhibitor in hereditary angioedema". Allergy, C. E. Hack, A. Relan, E. S. van Amersfoort & M. Cicardi)
** Icatibant Clinical Briefing Document, CDER, FDA, 2011./ Aberer, et al. Ann Allergy Asthma Immunol 2010; 105(5):P238
*** Cicardi et al, N Engl J Med 2010;363:532-41.; Aberer, et al. Ann Allergy Asthma Immunol 2010; 105(5):P238; Lumry, et al. Ann Allergy Asthma Immunol. 2011;107:529–537.
**** Berinert not licensed for peripheral attacks in the US.
^ Ruconest approved in US, EU and Israel, ^^Ruconest will file for prophylaxis - reduces attacks by 74% in prophylaxis Phase II data, ^^^Cinryze not licensed for acute therapy in US. ^^^^Kalbitor not approved in EU.
?? Kalbitor moderate response rate is likely to be pathway-related, at least in part. Relapse rate is also likely to be pathway-related in part. Accordingly DX 2930 may also have these issues. In addition, the safety consequences of chronically inhibiting the contact pathway have not been studied, and this may also be a factor. Antibodies tend not to have large (>75%) response rates.
Note: New forms of products for different routes of administration may require clinical development and will require regulatory approval.
†† Shire had temporary failure to supply Cinryze due to contract manufacture problems in Q4 2016 and Q1 2017

Source: Pharming, Company Reports

Shire

Shire is a large biopharmaceutical company with a focus on rare diseases in various therapeutic areas. Its Hematology products include ADVATE (Antihemophilic Factor (Recombinant)), ADYNOVATE/ADYNOVI (Antihemophilic Factor (Recombinant), PEGylated)), RIXUBIS (Coagulation Factor IX (Recombinant)), VONVENDI (von Willebrand factor (Recombinant)) and FEIBA (Anti-Inhibitor Coagulant Complex). Its Genetic Diseases products include CINRYZE (C1 esterase inhibitor (human)), FIRAZYR (icatibant), ELAPRASE (idursulfase), REPLAGAL (agalsidase alfa) and VPRIV (velaglucerase alfa). Especially in HAE it expanded its position with the acquisitions of Jerini in 2008 (after the approval of Firazyr), ViroPharma in 2014 (who acquired LEV Pharmaceuticals, founded by Sanquin Bloedbank in 2008 after the approval of Cinryze) and Dyax in 2015. With these acquisition, Shire effectively acquired the HAE therapies Cinryze, Firazyr and Kalbitor. The total combined sales of these products in 2016 was USD 1.3 billion. The total combined acquisition of these three companies totalled USD 11.2 billion. The company is also developing Lanadelumab (SHP643). On May 18, 2017, Shire announced positive topline Phase III results for the HELP Study, which evaluated the efficacy and safety of subcutaneously administered lanadelumab in patients 12 years of age or older with HAE. The study met its primary endpoint and all secondary endpoints.

CSL Behring

CSL Behring is an Australian biotherapeutics company that sells and develops plasma therapies and recombinants. Its line of therapies includes products for the treatment of bleeding disorders such as hemophilia and von Willebrand Disease, primary immune deficiencies and HAE. Its product Berinert is a plasma derived therapy used for the treatment of acute HAE attacks. In 2016, estimated sales were USD 250 million. Berinert is a key plank of CSL's specialty product portfolio which contributes around 20% to CSL Behring revenue. In June, the company received approval for Haegarda (previously known as CSL830) from the FDA as a subcutaneous preventive treatment for HAE. It is worth noting CSL's clinical trials of CSL830 command twice-weekly dosing, which is

similar to current IV dosing schedules of one injection every 3-4 days. Given administration times for IV and subcutaneous are both within minutes of each other, the key differentiating factor appears simply veinous or subcutaneous access – it is unclear with such limited difference whether uptake of subcutaneous C1-esterase inhibitor products will be as successful as observed in the subcutaneous immunoglobulin market. That said, CSL has exhibited data with respect to Haegarda which supports trough levels of C1-esterase functional activity at 42.9% compared to IV of 29.4% – although this is yet to be proven as resulting in superior clinical outcomes/reduced HAE attacks. CSL also sells Biostate, a freeze-dried preparation containing human coagulation Factor VIII in people with haemophilia A. Last year the company generated around USD 1 billion in revenues in products for haemophilia.

BioCryst

BioCryst Pharmaceuticals designs, optimizes and develops novel small molecule drugs that block key enzymes involved in orphan and infectious diseases. BioCryst's core development programs include BCX7353 and additional 2nd generation oral inhibitors of plasma kallikrein for HAE. In August 2016, BioCryst announced that it dosed the first subject in the APeX-1 clinical trial of BCX7353 for the oral treatment of hereditary angioedema (HAE). APeX-1 is a two part, Phase II, randomized, double-blind, placebo-controlled dose ranging trial to evaluate the safety, tolerability, pharmacokinetics, pharmacodynamics and efficacy of BCX7353 as a preventative treatment to eliminate or reduce the frequency of angioedema attacks in HAE patients. Up to approximately 50 eligible subjects with HAE will be enrolled in the study. In part 1 of APeX-1, subjects with HAE will be randomized in a 1:1 ratio to receive an oral dose of either 350 mg of BCX7353 once daily or placebo once daily for four weeks. An interim analysis will be conducted after the first 24 subjects have completed treatment through study day 28. If a robust treatment effect is observed at the interim analysis, Part 2 of the study will be initiated. In the event the treatment effect is not well characterized with 24 subjects, a total of up to approximately 36 subjects will be enrolled in part 1. The sample size in Part 1 is being kept flexible to cover a range of response options that would

achieve 90% power with an alpha of 0.05, based on reduction of attack rate of at least 70% on BCX7353, placebo response rate of approximately 30%, and standard deviation of approximately 0.45 attacks per week. To characterize dose-response in part 2 of APeX-1, 14 additional subjects with HAE will be randomized to 250mg of BCX7353 once daily (n=6), 125mg of BCX7353 once daily (n=6) or placebo (n=2). The primary efficacy endpoint of APeX-1 is the number of angioedema attacks; attack rate per week, counts of attacks, proportion of subjects with no attacks, and number of attack-free days will be analyzed.

Ionis Pharmaceuticals

Ionis Pharmaceuticals is a RNA-targeted drug discovery and development focused on developing drugs for patients with a high unmet medical need. Using its proprietary antisense technology, Ionis has created a pipeline with over three dozen drugs in development. Its drug IONIS-PKK_{Rx} is an antisense drug designed to reduce the production of prekallikrein, or PKK, to treat patients with HAE. PKK plays an important role in the activation of inflammatory mediators associated with acute attacks of HAE. The company is developing ONIS-PKK_{Rx} as a prophylactic treatment for patients with HAE. In 2015 it completed a Phase I study evaluating IONIS-PKK_{Rx} in healthy volunteers. The Phase I study was a randomized, double-blind, placebo-controlled, dose-escalation study in healthy volunteers that evaluated multiple doses of IONIS-PKK_{Rx}.

Analyst: Marcel Wijma MSc
Marcel Wijma, Chief Research Officer and managing partner, has a longstanding history in financial biotech research. After selling Van Leeuwenhoeck Research (VLR) to SNS Securities in 2006, he established an award winning analyst team in biotech/life sciences at SNS Securities. In 2009, Marcel was awarded by Financial Times/Starmine as being one of the Top-3 biotech analysts in Europe. Later that year, Marcel purchased VLR from SNS Securities after which the company was reconstituted. At VLR, he leads the professional VLR research organisation, which is augmented by selected external financial researchers with a specialisation in Life Sciences. Mr. Wijma has a Masters degree in Financial Economics from Erasmus University in Rotterdam.